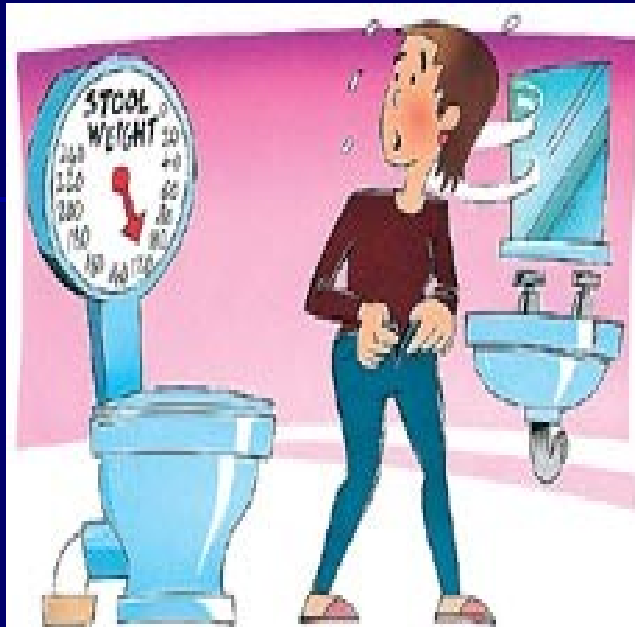


# Irritable Bowel Syndrome

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# Definition

## ▯ Irritable Bowel Syndrome (IBS)

- Abdominal pain
- Altered GI motility
- Change in bowel habits
- No identifiable organic etiology

# Epidemiology

- 10-25% Prevalence in North America
- Up to 70% of patients do not seek medical attention for their symptoms
- Male : Female → 1:2
- Whites/Blacks similar, but Hispanics lower
- Most common in young adults (<45)

# Societal Impact

- Seventh most common syndrome diagnosed in outpatient setting
- 25-50% of all GI referrals
- > 2 million prescriptions written annually
- 2<sup>nd</sup> leading cause of absenteeism from work
- Patients with IBS seek medical attention 3X more often than non-IBS patients

# Clinical Manifestations

- Chronic Abdominal Pain
  - Typically crampy
  - Relieved with BMs
  - Often, but not always LLQ
  - Variable intensity over time
- Often alternate between constipation and diarrhea
- IBS symptoms may be exacerbated by stress, alcohol, or food

# Clinical Manifestations

- Diarrhea – many but not all IBS patients
  - Frequent loose stools
  - Small to moderate volumes
  - Often in AM or after meals
  - Mucous in stools
  - Increased urgency with stress
- Constipation
  - Lasts days to months
  - Hard, pellet-shaped stools
  - Sense of incomplete evacuation





# Clinical Manifestations

## ■ Other GI Symptoms

- Reflux
- Dysphagia
- Early Satiety
- Dyspepsia
- Nausea
- Noncardiac Chest Pain
- Bloating
- Flatulence
- Belching

# Clinical Manifestations

## ■ Extraintestinal Complaints

- Chronic Pelvic Pain
- GU Dysfunction
- Rheumatologic symptoms
- Chronic fatigue
- Insomnia
- Decreased Concentration
- Headache
- Low Back Pain

# Clinical Manifestations

- Psychosocial Dysfunction
  - Anxiety
  - Depression
  - Somatization

# Manning Criteria

- Pain relieved with defecation
- More frequent stools at onset of pain
- Looser stools at the onset of pain
- Visible abdominal distention
- Passage of mucus
- Sensation of incomplete evacuation

(Sensitivity 42%, Specificity 85%)

## **Rome II Diagnostic Criteria for Irritable Bowel Syndrome<sup>3†</sup>**

**At least 12 weeks, which need not be consecutive, in the preceding 12 months of abdominal discomfort or pain that has 2 of 3 features:**

1. Relieved with defecation; and/or
2. Onset associated with a change in frequency of stool; and/or
3. Onset associated with a change in form (appearance) of stool.

**Symptoms that cumulatively support the diagnosis of IBS:**

1. Abnormal stool frequency (for research purposes, 'abnormal' may be defined as greater than 3 bowel movements per day and less than 3 bowel movements per week);
2. Abnormal stool form (lumpy/hard or loose/watery stool);
3. Abnormal stool passage (straining, urgency, or feeling of incomplete evacuation);
4. Passage of mucus;
5. Bloating or feeling of abdominal distention.

The diagnosis of a functional bowel disorder always presumes the absence of a structural or biochemical explanation for the symptoms.

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NOTE. Evaluation also includes a complete physical examination, sigmoidoscopy, and additional testing when indicated. Other studies may include examination of the stool (ova and parasites, occult blood, laxatives), complete blood count, sedimentation rate, and serum chemistries. In certain cases, imaging studies (eg, upper gastrointestinal series, colonoscopy with rectal biopsy) will be needed).

<sup>†</sup>Thompson, WG, Longstreth, G, Drossman, DA, et al. Functional bowel disorders. In: Rome II: The Functional Gastrointestinal Disorders, 2nd edition, Drossman, DA, Corazziari, E, Talley, NJ (Eds), et al, Degnon Associates, McLean, VA 2000. p.355. Copyright © 2000 Degnon Associates.



# ■ Bristol Stool Scale

Type I - Separate hard lumps, like nuts

Type II - Sausage-like but lumpy

Type III - Like a sausage but with cracks in the surface

Type IV - Like a sausage or snake, smooth and soft

Type V - Soft blobs with clear-cut edges

Type VI - Fluffy pieces with ragged edges, a mushy stool

Type VII - Watery, no solid pieces

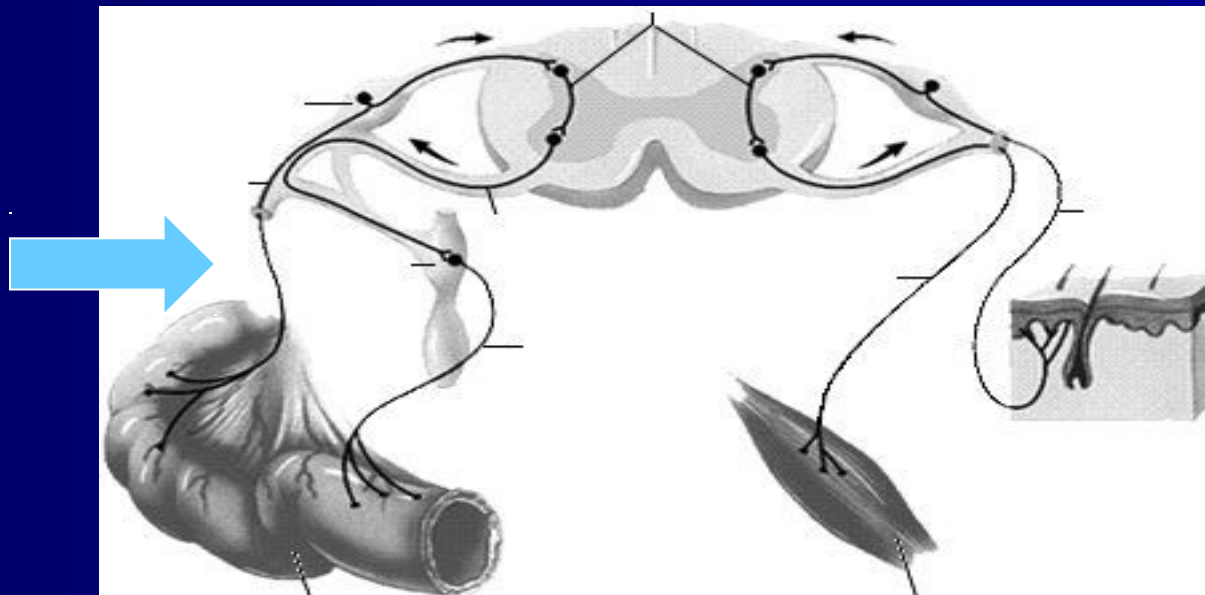


# Pathophysiology - Uncertain!

- Altered GI Motility
- Visceral Afferent Hypersensitivity
- Autonomic Hyperactivity
- Microscopic Inflammation
- Post-infectious
- Psychosocial Dysfunction



# Visceral Afferent Pathway



The 4 types of peripheral neurons: somatic afferent (top right), somatic efferent (bottom right), visceral afferent (top left), and visceral efferent (bottom left).

# Pathophysiology - Uncertain!

- Other Possibilities
  - i) Bile acid malabsorption
  - ii) Neurohumeral or neuroimmune stress response
  - iii) Abnormal lipid digestion
  - iv) Lactose Intolerance

# Diagnostic Evaluation

- Balance need to r/o organic disease with cost/risk of multiple procedures
- History
  - Careful medication and & diet history
    - Sorbitol, Lactose Intolerance, Magnesium containing antacids may mimic IBS Sx
  - Psychiatric History
    - h/o abuse or sexual trauma
  - Family History

# Diagnostic Evaluation

- Physical Exam
  - Abdominal Exam
  - Rectal Exam
- Recommended Routine Diagnostic Tests
  - CBC, CMP, TFTs, ESR, Hemoccult
  - Stool for O&P/Culture (If diarrhea predominant)
  - Trial of Therapy if above WNL
  - ? Anti-endomyosial antibody

# Diagnostic Evaluation

- Not Recommended (In patients Meeting Manning Criteria) by AGA Consensus Guideline
  - Flexible Sigmoidoscopy
  - Barium Enema
  - Colonoscopy (in patients < 50 yo)

# Follow Up of IBS

- Re-evaluate in 4-6 weeks
- Consider further evaluation if
  - Worsening symptoms
  - New red flags
  - No response to medication
- Further evaluation based on predominant symptom

# Further Evaluation

- Diarrhea Predominant
  - Small bowel radiography
  - Stool for osmotic gap
  - Colonoscopy with biopsy
  - Lactose breath hydrogen test to rule out lactose intolerance

# Further Evaluation

- Pain Predominant
  - KUB
  - CT scan of abdomen and pelvis
  - Serum amylase
  - Liver function tests
  - Lactose hydrogen breath test
  - ? Glucose hydrogen breath test to r/o small intestinal bacterial overgrowth



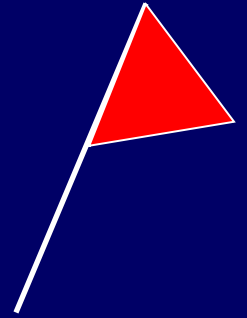
# Further Evaluation

- Constipation Predominant
  - Anorectal manometry
  - Defecography
  - Colonic transit test using radiopaque markers
  - r/o upper GI dysmotility (gastric emptying and small bowel motility)

# Differential Diagnosis

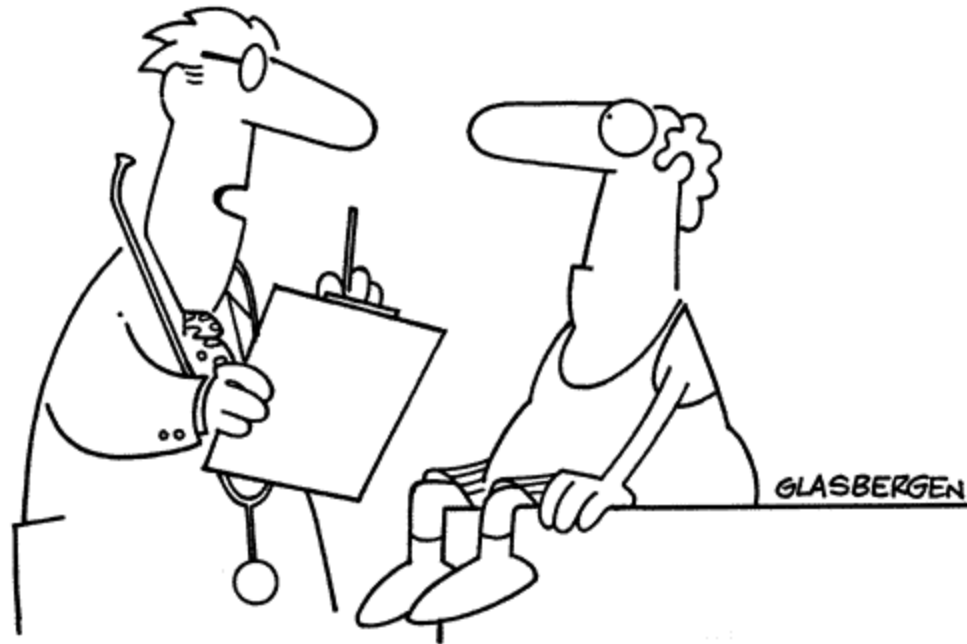
- Inflammatory Bowel Disease
- Celiac Sprue
- Colon CA
- Malabsorption

# Red Flags



- Age > 50 at onset
- Anorexia
- Fever
- Night sweats
- Family history of inflammatory bowel disease or colon CA
- Anemia
- Weight loss (> 10#)
- Bloody diarrhea
- Hematochezia
- Chronic &/or voluminous diarrhea
- Fatty or greasy stools
- Pain that interrupts or prevents sleep

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**“We can’t find anything wrong with you, so we’re going to treat you for Symptom Deficit Disorder.”**

# Treatment of IBS

- Focus on comfort, not cure
- Non-Medical Therapies
  - Therapeutic Alliance
  - Patient Education
  - Hypnosis
  - Biofeedback
  - Psychotherapy

# Treatment of IBS

## ■ Dietary Modification

- Increase fiber
- Avoid gas-producing foods (eg, beans, cabbage, legumes, cauliflower, broccoli, lentils, and Brussels sprouts)
- Avoid poorly absorbed carbohydrates (eg, fructose or sorbitol), or lactose in patients who are lactose intolerant or
- Avoid smoking, chewing gum, or eating rapidly
- Avoid large fatty meals or caffeine

# Treatment of IBS

- Medications
  - Diarrhea Predominant IBS
    - Antispasmodics
    - Cholestyramine
    - 5-HT<sub>3</sub> Receptor Antagonists
  - Pain Predominant IBS
    - Antispasmodics
    - Tricyclics
    - SSRIs
    - Analgesics

# Loperamide

- 2 to 4 mg up to four times daily
- Reduces diarrhea by slowing the forward propulsion of intestinal contents by the intestinal muscles.
- Related chemically to narcotics such as morphine, but does not have any of the narcotics pain-relieving effects even at high doses.
- Efficacy reduced by Cholestyramine



# Cholestyramine

- 4 to 8 grams once or twice a day.
- Binds to bile acids in the intestine. This prevents their absorption, and the cholestyramine/bile acid complexes are eliminated in the stool
- Increases stool bulk and firms consistancy

# Hyoscyamine

- One of the principal anticholinergic/antispasmodic components of belladonna alkaloids.
- 0.125 mg – 0.250 mg PO BID



# Donnatol

- Combines naturally occurring belladonna alkaloids (atropine, scopolamine and hyoscyamine) with phenobarbital.
- Multiple effects, including reduction of bowel spasms caused by overly active nerves and mild sedation.

# 5-HT<sub>3</sub> Receptor Antagonists

- Currently approved for the treatment of chemotherapy- and radiotherapy-induced nausea and emesis and they also may be effective in postoperative nausea and vomiting.
- Alosetron recently reapproved by FDA for women with severe diarrhea-predominant IBS failing other therapy

# Treatment of IBS

- Constipation Predominant IBS
  - Fiber supplements
  - Laxatives
  - Prokinetic Agents
- Others
  - Antidepressants (Tricyclics, SSRIs)
  - Enteric Neuromodulators – affect GI Serotonin receptors
  - Benzodiazepines – very limited usefulness
  - Antibiotics – case reports

# Emollients, Enemas, Etc.

- Stool softener
  - Docusate sodium 100 mg
- Emollient
  - Mineral oil 5–15 mL
- Enemas and suppositories
  - Phosphate enema 120 mL
  - Mineral oil retention enema 100 mL
  - Tap water enema 1500 mL
  - Soap suds enema
  - Glycerin

# Laxatives

- Osmotic

- Saline laxatives

- Magnesium hydroxide 15–30 mL
    - Sodium phosphate 0.5–10 mL with 12 oz of water

- Poorly absorbed sugars

- Lactulose 15–30 mL
    - Sorbitol 15–30 mL

# Laxatives

- Stimulant laxatives
  - Anthraquinones
    - Cascara sagrada 325 mg (or 5 mL)
    - Senna 187-mg tablets
  - Ricinoleic acid
    - Castor oil 15–30 mL
- Diphenylmethane derivatives
  - Bisacodyl 5–10 mg
  - Sodium picosulfate 5–15 mg



# 5-HT<sub>4</sub> receptor agonists

- Tegaserod (Zelnorm)
- Increases small bowel and proximal colonic motility in patients with constipation-predominant IBS.
- Improves abdominal discomfort, stool frequency and consistency, and abdominal bloating
- Safe and well-tolerated
- Side effect: Diarrhea

# Treatment of IBS

- Alternative Medicines
  - Herbals:
    - Ginger
    - Aloe
    - Peppermint oil
  - Probiotics to alter intestinal flora

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**“What fits your busy schedule better, exercising one hour a day or being dead 24 hours a day?”**